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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/529,334
Filing Date: March 24, 2005
Appellant(s): LINDEMANN ET AL.

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EXAMINER'S ANSWER

This is in response to the appeal brief filed 08/04/2010 appealing from the Final Office action mailed 02/02/2010 and Advisory Action mailed 03/26/2010.

I. Real Party in Interest

The real party in interest in this application and the appeal is contained in the brief.

II. Related Appeals and Interferences

Examiner is not aware of any related Appeals, Interferences or Judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this pending appeal.

III. Status of Claims

The statement of the status of Claims contained in the brief is correct.

IV. Status of Amendments

Appellant's statement of the status of amendments after final rejection contained in the brief is correct.

V. Summary of the Claimed Subject Matter

Summary of the Claimed subject matter contained in the brief is correct.

VI. Grounds of Rejections to be Reviewed on Appeal

Appellant's statement of the grounds of rejection to be reviewed on Appeal is correct.

VII. Claims Appendix

Copy of the Appealed Claims contained in the Appendix to the brief is correct.

VIII. Evidence Relied Upon

Adcox, Timothy D. et al. US 20030236916 12/25/2003

IX. Grounds of Rejection

The following ground(s) of rejection are applicable to the Appealed Claims:

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 14-28 and 32-35 rejected under 35 U.S.C. 102(e) as being anticipated by US Patent Publication No. 20030236916 to Adcox, Timothy D. et al., (hereinafter "Adcox").

As regards to Claim 14, *Adcox discloses, method for transparently exchanging data packets of a packet-oriented network by a network node device* (Adcox as stated in par. [0004], in a "fiber to the home" (FTTH) system having a central office (CO) that interfaces a packet data network with a passive optical network (PON). The (MAC) layer address translation system includes a home network unit (HNU), a host system, and a MAC address table. The HNU is coupled to the PON and has an associated base MAC layer address and an associated secondary MAC layer address that identify the HNU within the PON. The host system is coupled in a network to the HNU and has an associated host MAC layer address that identifies the host system within the network),

the packet oriented network comprised of at least one network element connected to the network node device (Adcox as stated in par. [0012], [0074], The drop fiber is terminated at the customer premise in an electronic unit called The Home Network Unit ("HNU"). FIG. 9 is an electrical block diagram of the HNU 50. The HNU 50 is a unique part of the FTTH system 10 that provides complete, broadband, multi-media access for a single subscriber. The HNU 50 is a locally-powered advanced network device that provides 3 telephone POTS connections, a bi-directional 10Base-T Ethernet connection, a CATV coaxial connection 60, and a DBS digital TV connection 58. These connections, which are preferably located along a single strip on the bottom of the HNU unit 50, are subsequently connected to the internal phone, data, and TV wiring of the subscriber's home or business, and then coupled to the phones, computers, TVs and other peripherals of the subscriber),

each network element having a unique address within the packet-oriented network, the network node device utilizing the method comprising (Adcox as stated in par. [0110], [0112], FIG. 17 illustrates an exemplary FTTH system 400 with an Ethernet connection supporting MAC layer address translation. The system 400 includes a plurality of HNUs 410 coupled to the central office 12 via the passive optical network (PON) 44, 46. In addition, each HNU 410 in the system 400 is coupled to a plurality of host systems 415-418 via an Ethernet drop 54. Each host system 415-418 is assigned a static MAC address, typically by a manufacturer that identifies the device on the Ethernet (are unique address)):

setting up a connection between a first network element and an external device, the connection being set up such that the unique address of the first network element is converted to an address valid for the external device (Adcox as stated in par. [0057-0058], [0111-0116], FIG. 4 is a block diagram showing TCP/IP data transport over an Ethernet connection in a FTTH system. This figure depicts data flow from the PPPOE broadband remote access server 26A to the individual 10Base-T connections of the HNUs 50. From the PPPOE server 26A, the data connections fan out through Ethernet switches 22. Via this connectivity, the subscriber can connect their computer via Ethernet to the home network unit 50. The subscriber installs a PPPOE client on their computer that allows them to access ISPs through a dial-up networking client. The central office 12 and PON 44, 46 may be similar to those described above. For example, the central office 12 preferably includes a QOIU 20A, Ethernet switch 22, and PPPOE server 26A, as describe above with reference to FIG. 4. The host systems 415-418 are processing devices, such as personal computers, that are configured to communicate over an Ethernet connection. The HNUs 410 are each assigned a base MAC address that is used to transmit and receive data traffic over the PON 44, 46. In addition, the HNUs 410 each include a MAC address look-up table 420 that is used to relate the secondary HNU MAC addresses with corresponding host MAC layer addresses. The MAC address look-up table 420 may, for example, be stored in a memory device accessible by a processor in the HNU 410. The HNUs 410 may also include a MAC address translation software module that is executed by a processor in the HNU 410 to query the MAC address look-up table 420. When a data packet is

transmitted from a host system 415-418, the MAC layer address of the host system 415-418 is translated into a secondary MAC layer address for the HNU 410 before the data packet is transmitted through the FTTH system 400 to the network 26);

verifying message header entries of data packets exchanged between the external device and the first network element; (Adcox as stated in par. [0117], For example, if one of the host systems (e.g., host 2) 416 addresses a data packet for transmission to a packet data network 26, such as the Internet, then the data packet is first transmitted over the Ethernet 54 to the HNU 410. The data packet from the host system 416 initially includes a header that identifies the MAC address (e.g., 00:50:04:00:C1:8D) assigned to the host system 416. Once the data packet is received by the HNU 410, the MAC address table 420 is queried to translate the host MAC address (e.g., 00:50:04:00:C1:8D) into a corresponding secondary HNU MAC address (e.g., 00:B0:48:00:34:B3). The data packet header is then modified by the HNU 410 to replace the MAC address of the host system 416 with the identified secondary MAC address for the HNU 410. In addition, if the outgoing data packet is an ARP request, then the HNU 410 may also modify the Ethernet address embedded in the payload data to the identified secondary HNU MAC address. The modified data packet is then transmitted over the FTTH system 400 to the network 26);

determining whether a message header entry characterizing an expanded packet-oriented protocol is within the message header entries (Adcox as stated in par. [0118], [0013], [0032], An example of an outgoing data packet 500 transmitted from the HNU 410 to a network device is shown in FIG. 18. The data packet includes a header

502, a data payload 504, and a CRC checksum 506. The header 502 includes a 6 byte destination address 508 that identifies the network device, a 6 byte source address 510 that identifies the HNU 410, and a 2 byte protocol field 512 that identifies the protocol of the data payload (e.g., IP). As explained above, the source address 510 of the data packet 500 is a secondary MAC layer address that identifies the HNU 410 and also identifies one of the host systems 415 by means of its least significant byte (e.g., B2). The FTTH system provides high-speed symmetrical (i.e., bi-directional) data transport using a secure Point-to-Point Protocol over Ethernet (PPPoE) transport protocol. Data from customers is aggregated and converted, if necessary, at a CO to a protocol compatible with the Internet Service Providers. HNU data traffic is received and transmitted as Ethernet packets using Point-to-Point Protocol over Ethernet (PPPoE). The 10Base-T interface provided at the HNU 50 is IEEE 802.3 compliant. The HNU 10Base-T interface is connected to a standard Network Interface Card (NIC) installed in the customer's computer over CAT-3 or CAT-5 cabling in the home. The PPPoE session is initiated at the customer's computer and terminated by the ISP provider);

if the message header entry is determined to characterize an expanded packet-oriented protocol, establishing a temporarily transparent connection between the first network element and the external device, the unique address of the first network element that is valid for the external device being transferred to the external device without converting that unique address for a duration of the temporarily transparent connection (Adcox as stated in par. [0119], The secondary HNU MAC layer address may be assigned to a particular host system 415-418 in the MAC address table 420

either statically or dynamically to identify the host device 415-418 from which the data packet was initiated. For example, in one embodiment, the secondary HNU MAC addresses may be dynamic. That is, a secondary HNU MAC address may be temporarily assigned to a particular host system 416 when the host system 416 first communicates with the HNU 410. The secondary HNU MAC address may then be reassigned to another host device 415, 417, 418 if the HNU 410 and host system 416 are not in communication for a set period of time. In another embodiment, the secondary HNU MAC addresses may be static. That is, each host system 415-418 may be permanently assigned a secondary HNU MAC address in the MAC address table 420).

As regards to Claim 15, *Adcox discloses, method according to claim 14, wherein the unique address of the first network element is assigned by the external device while the connection is set up between the first network element and the external device* (Adcox as stated in par. [0049], [0111-0113], to support the multi-media services provided in the FTTH system 10, each Quad OIU card 20A has a 100 Base-T interface that interfaces to an Ethernet switch 22 going upstream for internet service providers (ISPs) 26B. The Ethernet switch 22 is coupled to a PPPOE server 26A, which controls customer access to the ISPs 26B. The central office 12 and PON 44, 46 may be similar to those described above. For example, the central office 12 preferably includes a QOIU 20A, Ethernet switch 22, and PPPOE server 26A, as describe above with reference to FIG. 4. The HNUs 410 are each assigned a base MAC address (e.g., 00:B0:48:00:34:B1) that is used to transmit and receive data traffic over the PON 44,

46, as described above. In addition, the HNUs 410 are also assigned a plurality of secondary MAC addresses, each corresponding to one of the host systems 415-418 coupled to the HNU 410 via the Ethernet drop 54. Preferably, the secondary MAC addresses of the HNU 410 are assigned by incrementing the base MAC address by a set value. In the illustrated embodiment, for example, the secondary MAC address corresponding to host 1 (415) is 00:B0:48:00:34:B2, which is assigned by incremented the base MAC address by a value of 1. Operationally, data traffic may be transmitted to and from the HNU 410 using either the base MAC address or any of the secondary MAC addresses).

As regards to Claim 16, *Adcox discloses, method according to claim 14, wherein a modulation/demodulation device connects the external device to the network node device such that the network node device exchanges data packets of the packet-oriented network with the external device via the modulation/demodulation device.* (Adcox as stated in par. [0035], [0056], [0096], The CO equipment consists of a Splitter WDM Frame (SWX) 30, fiber amplifiers and transmitters 38A-38E, DISCS.RTM. MX MDS 20A 20B, 20F, DISCS.RTM. Common Shelf 20C, broadband data aggregation equipment 22, plus the corresponding management systems 20E. The CO equipment supports existing NGDLC capabilities (TR-008, GR-303) plus the interfaces to OSS systems required for management of video and data traffic. Each Quad OIU card 20A at the central office 12 supports 4 fibers, and with the 4-to-1 split on each one of these fibers, 16 home network units 50 can be coupled to one Quad OIU card 20A. The sixteen 10Base-T interfaces 54 in the homes are aggregated into a single 100 Base-T

interface 20G back into the Ethernet switch 22 at the central office 12. In this manner, one 100 Base-T port supports 16 homes (HNU)s. FIG. 13 is an electrical block diagram showing the logical components of a preferred Common FPGA 134 operating within the QOIU card 20A. The Common FPGA 134 includes a PCMR interface block 270 for receiving Pulse-Code Modulated (PCM) data from the DPU controller 20B, a PCMX interface block 272 for transmitting PCM data to the DPU controller 20B, a back-plane processor interface 274, which is also coupled to the DPU 20B, a phase-locked loop block 276, a RISC interface block 278, a memory controller block 280 for interfacing the circuitry on the common FPGA to an associated SRAM 138, a plurality of OIU Receiver interface modules 282 for interfacing with the framers on the Framer FPGA, and a transmit packet generator 292 for transmitting packets to the framers).

As regards to Claim 17, *Adcox discloses, method according to claim 15, wherein a modulation/demodulation device connects the external device to the network node device such that the network node device exchanges data packets of the packet-oriented network with the external device via the modulation/demodulation device* (Adcox as stated in par. [0074-0078], FIG. 9 is an electrical block diagram of the HNU 50. The HNU 50 is a unique part of the FTTH system 10 that provides complete, broadband, multi-media access for a single subscriber, as described generally above. The HNU 50 is a locally-powered advanced network device that provides 3 telephone POTS connections, a bi-directional 10Base-T Ethernet connection, a CATV coaxial connection 60, and a DBS digital TV connection 58. These connections, which are preferably located along a single strip on the bottom of the HNU unit 50, are

subsequently connected to the internal phone, data, and TV wiring of the subscriber's home or business, and then coupled to the phones, computers, TVs and other peripherals of the subscriber. The QuPlexer.TM. 52 is a module that handles all the optics, optical to electrical conversions O/E and E/O, and optical multiplexing/demultiplexing of the various multi-media signals serviced through the HNU 50. An input fiber 174 couples to the QuPlexer.TM. 52, and carries the 1550 nm video information and the 1310 nm telephony and data information. The QuPlexer.TM. receives the 1550 nm video signal, isolates it from the 1310 nm signal, converts it to a corresponding electrical signal, and routes that signal to the CATV connector 172 and the DBS connector 172 for distribution to the TV and other peripheral devices in the subscriber's home that are connected to the CATV coax 60 or the DBS coax 58).

As regards to Claim 18, *Adcox discloses, method according to claim 14, wherein a verification is carried out before the transparent connection for the first network element is set up to determine whether a transparent connection already exists for a least one other network element* (Adcox as stated in par. [0086-0088], FIG. 11 is an electrical block diagram showing the logical components of the control Field Programmable Gate Array (FPGA) 150 operating within the HNU 50. A RISC processor interface 234 is included in the FPGA, and is used to communicate information between the control FPGA 150 and the off-chip RISC processor 158. This is provided so that the processor has access to read and write in the EABs so that it can learn the MAC address of the Quad OIU 20A for packet routing. As noted above, if the received packet at the Rx Fiber interface 200 matches the HNU's MAC address, it is routed to the

receive DS-0 handler 222. If the address of the packet doesn't match the MAC address of the HNU 50, then the packet is routed to the receive memory controller 206, where it gets stored in the 64 k by 16 SRAM 210. Packets are also monitored coming downstream from the home devices to the HNU 50, and if it matches a MAC address that has already been learned by the HNU 50 as being associated with peripherals coupled to the Ethernet PHY 54, then the packet gets forwarded on to the Ethernet connection).

As regards to Claim 19, *Adcox discloses, method according to claim 15, wherein a verification is carried out before the transparent connection for the first network element is set up to determine whether a transparent connection already exists for a least one other network element* (Adcox as stated in par. [0090-0091], Data traffic coming from the subscriber's network is received by the transmit Ethernet PHY 54, and is routed on-chip to the Tx Ethernet MAC 218, onto the Rx Memory controller 220, and is written into the SRAM 154 via the memory interface 210. Also shown here is a Rx Ethernet monitor 216, which monitors the incoming data traffic from the subscriber's network and learns the MAC addresses associated with computers (or other devices) in that home. These MAC addresses are stored and utilized by the Rx Memory controller 206 in determining whether received data packets from the QuPlexer.TM. 52 should be routed onto the subscriber's Ethernet connection or dropped. The transmit memory controller 208 reads data packets out from the memory 154 via the memory interface 21, and routes them out to the transmit fiber interface 202, where the data packets from the Ethernet connection are merged with the voice traffic. The transmit fiber interface

202 prioritizes voice packets from the Tx DS-0 packet generator 224 so as to reduce any latency that may be added to the voice traffic in the event of a large data packet from the Tx memory controller 208. If a large data packet is already in the process of being transmitted, the Tx Fiber Interface will pause transmitting that data packet and cut-through to the voice-packet from the Tx DS-0 packet generator 224 in order to ensure that the voice packets are prioritized, thereby reducing the round-trip latency imposed on voice traffic within the system).

As regards to Claim 20, *Adcox discloses, method according to claim 16, wherein a verification is carried out before the transparent connection for the first network element is set up to determine whether a transparent connection already exists for a least one other network element* (Adcox as stated in par. [0105-0106], FIG. 15 shows an HNU timeslot selection interface 330 that may be included in the HNUs 50. As noted above, each of the four HNUs 50 in a group transmit upstream to the central office 12 in one of four TDMA data slots. FIG. 15 shows a mechanism for manually selecting the upstream TDMA time slot for a particular HNU 50. FIG. 16A sets forth the methodology 340 of automatically selecting an HNU timeslot when power is first applied to the HNU 50. Beginning at step 342, power is applied to the HNU 50, or, as described below, a timer interrupt causes the already-powered up HNU 50 to proceed to the remaining steps of the method. At step 344, the HNU 50 retrieves a pre-programmed HNU timeslot from memory. The HNU 50 then determines, at step 346, if that timeslot is already in use by another HNU 50 in the group of four HNUs 50. If the timeslot is not in use, then at step 354 the HNU 50 is enabled to communicate on the stored timeslot).

As regards to Claim 21, *Adcox discloses, method according to claim 14, wherein a maximum number of transparent connections is defined depending on a specification of the external device* (Adcox as stated in par. [0027], [0032], The HNU 50 provides all services on a single circuit card mounted in the housing. The HNU circuit board provides the WDM and electrical to optical conversion functions to extract the POTS and data signals from the 1310nm wavelength and the video signals from the 1550 nm wavelength. In the upstream direction the HNU 50 converts the electrical signals to optical signals and multiplexes the 1330 nm and 1550 nm wavelengths onto the fiber for transport back to the CO.HNU data traffic is received and transmitted as Ethernet packets using Point-to-Point Protocol over Ethernet (PPPoE). The 10Base-T interface provided at the HNU 50 is IEEE 802.3 compliant. The HNU 10Base-T interface is connected to a standard Network Interface Card (NIC) installed in the customer's computer over CAT-3 or CAT-5 cabling in the home. The PPPoE session is initiated at the customer's computer and terminated by the ISP provider. The high-speed data service downstream performance is 20 Mbps shared among four homes connected at the Passive Optical Splitter 46 with downstream burst capability of 10 Mbps to each home. The upstream performance is 4.5 Mbps dedicated for each home. All four of the homes linked to the Passive Optical Splitter 46 have the ability to conduct simultaneous 4.5 Mbps data sessions).

As regards to Claim 22, *Adcox discloses, method according to claim 15, wherein a maximum number of transparent connections is defined depending on a specification of the external device* (Adcox as stated in par. [0056-0057], Each Quad

OIU card 20A at the central office 12 supports 4 fibers, and with the 4-to-1 split on each one of these fibers, 16 home network units 50 can be coupled to one Quad OIU card 20A. The sixteen 10Base-T interfaces 54 in the homes are aggregated into a single 100 Base-T interface 20G back into the Ethernet switch 22 at the central office 12. In this manner, one 100 Base-T port supports 16 homes. FIG. 4 is a block diagram showing TCP/IP data transport over an Ethernet connection in a FTTH system. This figure depicts data flow from the PPPOE broadband remote access server 26A to the individual 10Base-T connections of the HNUs 50. From the PPPOE server 26A, the data connections fan out through Ethernet switches 22. Each Ethernet switch 22 supports multiple 100 Base-T interfaces 20G to each Quad OIU card 20A, which in turn supports 4 fibers, or 16 HNUs 50, each having a 10 Base-T connection).

As regards to Claim 23, *Adcox discloses, method according to claim 21 further comprising rejecting an establishment of the transparent connection if another network element already has a transparent connection established* (Adcox as stated in par. [0059], [0088], FIG. 5 is a block diagram showing POTS telephony transport in a FTTH system. Here, the telephony data is packetized and routed to and from a class 5 digital switch 18 in the central office 12, and it interfaces to the DISCS.RTM. MX common equipment shelf 20C. The common equipment shelf 20C includes all of the circuitry necessary for proper routing and processing of the telephony data, such as an integrated Time-Slot Interchanger (TSI). As noted above, if the received packet at the Rx Fiber interface 200 matches the HNU's MAC address, it is routed to the receive DS-0 handler 222. If the address of the packet doesn't match the MAC address of the HNU

50, then the packet is routed to the receive memory controller 206, where it gets stored in the 64 k by 16 SRAM 210. Packets are also monitored coming downstream from the home devices to the HNU 50, and if it matches a MAC address that has already been learned by the HNU 50 as being associated with peripherals coupled to the Ethernet PHY 54, then the packet gets forwarded on to the Ethernet connection. If the MAC address doesn't match a learned MAC address at the HNU 50, then it is discarded so that only packets destined to MAC addresses at the particular subscriber's home actually go through the HNU 50. In this manner, packets associated with other HNUs 50 are not visible to the other HNUs 50 on the fiber network).

As regards to Claim 24, *Adcox discloses, method according to claim 21 further comprising cancelling an existing transparent connection and subsequently establishing a transparent connection between the external device and a second network element.* (Adcox as stated in par. [0061], [0091], The logical pipe for transporting the voice traffic is shared on a point-to-point basis between the home network units HNUs 50 and the Quad OIUs 20A, and voice traffic is prioritized over upstream data traffic. A special cut-through feature is implemented at the HNU 50 so that when a voice packet is ready to transmit, any data packet currently being sent is paused and the voice packet is cut-through for immediate transmission. This is done to prevent voice packets from having to wait until a large data packet completes transmission, which could take several TDM bursts. Once the voice packet has been transmitted, and assuming there are no other voice packets in the queue to transmit, the HNU 50 will then resume data transmission. The transmit memory controller 208 reads data packets out from the memory 154 via

the memory interface 21, and routes them out to the transmit fiber interface 202, where the data packets from the Ethernet connection are merged with the voice traffic. The transmit fiber interface 202 prioritizes voice packets from the Tx DS-0 packet generator 224 so as to reduce any latency that may be added to the voice traffic in the event of a large data packet from the Tx memory controller 208. If a large data packet is already in the process of being transmitted, the Tx Fiber Interface will pause transmitting that data packet and cut-through to the voice-packet from the Tx DS-0 packet generator 224 in order to ensure that the voice packets are prioritized, thereby reducing the round-trip latency imposed on voice traffic within the system).

As regards to Claim 25, *Adcox discloses, method according to claim 14 further comprising terminating the transparent connection after a connection release request is detected* (Adcox as stated in par. [0106], FIG. 16A sets forth the methodology 340 of automatically selecting an HNU timeslot when power is first applied to the HNU 50. Beginning at step 342, power is applied to the HNU 50, or, as described below, a timer interrupt causes the already-powered up HNU 50 to proceed to the remaining steps of the method. At step 344, the HNU 50 retrieves a pre-programmed HNU timeslot from memory. The HNU 50 then determines, at step 346, if that timeslot is already in use by another HNU 50 in the group of four HNUs 50. If the timeslot is not in use, then at step 354 the HNU 50 is enabled to communicate on the stored timeslot. At step 356, the LED corresponding to that timeslot is then illuminated, and at step 358, the timer interrupt is disabled. Control then passes to step 360, where the HNU 50 is waiting for an interrupt to occur).

As regards to Claim 26, *Adcox discloses, method according to claim 25, wherein the connection release request is triggered when no data packets have been exchanged according to the expanded packet-oriented protocol within a predefined time period* (Adcox as stated in par. [0119], The secondary HNU MAC layer address may be assigned to a particular host system 415-418 in the MAC address table 420 either statically or dynamically to identify the host device 415-418 from which the data packet was initiated. For example, in one embodiment, the secondary HNU MAC addresses may be dynamic. That is, a secondary HNU MAC address may be temporarily assigned to a particular host system 416 when the host system 416 first communicates with the HNU 410. The secondary HNU MAC address may then be reassigned to another host device 415, 417, 418 if the HNU 410 and host system 416 are not in communication for a set period of time. In another embodiment, the secondary HNU MAC addresses may be static. That is, each host system 415-418 may be permanently assigned a secondary HNU MAC address in the MAC address table 420).

As regards to Claim 27, *Adcox discloses, method according to claim 14, wherein the communication of the at least one network element with the network node device is effected according to Internet protocol or according to PPPoE communication protocol* (Adcox as stated in par. [0090], Data traffic coming from the subscriber's network is received by the transmit Ethernet PHY 54, and is routed on-chip to the Tx Ethernet MAC 218, onto the Rx Memory controller 220, and is written into the SRAM 154 via the memory interface 210. Also shown here is a Rx Ethernet monitor 216, which monitors the incoming data traffic from the subscriber's network and learns the MAC

addresses associated with computers (or other devices) in that home. These MAC addresses are stored and utilized by the Rx Memory controller 206 in determining whether received data packets from the QuPlexer.TM. 52 should be routed onto the subscriber's Ethernet connection or dropped. In one embodiment, the system only carries PPPOE traffic, and therefore the Rx Ethernet Monitor 216 is configured to learn only those MAC addresses associated with PPPOE traffic. In this manner, the subscriber can have a home network in their house with a number of computers, but only those machines that communicate using PPPOE can send/receive data outside the home network).

As regards to Claim 28, *Adcox discloses, network node element for supporting a transparent exchange of data packets comprising* (Adcox as stated in par. [0024-0027], The HNU 50 is located inside the customer premise 16 and provides the following services: (i) 3 POTS lines 56; (ii) 1 CATV drop (50-750 MHz) 60; (iii) 1 DBS drop (950-2050 MHz) 58; and (iv) 1 10 Mbps Ethernet drop 54. The HNU 50 provides all services on a single circuit card mounted in the housing):

at least one first network interface configured to connect to a packet-oriented network; at least one second network interface configured to connect to an external device (Adcox as stated in par. [0028], [0032], The POTS, video and Ethernet data are provided as connectorized outputs on the HNU 50 housing. Three RJ11 connectors are provided for connection to the house telephone wiring. Each connector provides a separate, private line. Two `F` type connectors are provided for video feeds into the customer premise. One connector provides the CATV signal and the other provides the

digital DBS signal. A single RJ45 connector is provided for a 10Base-T high-speed data connection to the customer's computer. HNU data traffic is received and transmitted as Ethernet packets using Point-to-Point Protocol over Ethernet (PPPoE). The 10Base-T interface provided at the HNU 50 is IEEE 802.3 compliant. The HNU 10Base-T interface is connected to a standard Network Interface Card (NIC) installed in the customer's computer over CAT-3 or CAT-5 cabling in the home);

at least one monitoring unit operatively connected to at least one of the at least one first network interface and the at least one second network <u>*interface,*</u> *the at least one monitoring unit configured to establish a temporarily transparent connection between at least one network of the packet-oriented network and* <u>*the*</u> *external device* (Adcox as stated in par. [0044-0046], [0090], A Supervisory System (SS) platform 20E is connected to the FTTH system 10 via the Central Office Terminal (COT) 20D. The COT provides a control path DS1 to the Common Shelf 20C which carries control messages to/from the MDS shelf 20F and to the HNU 50 via the fiber link. The SS 20E is connected to the COT 20D via a RS-422 connection. One COT 20D controls up to 16 Common shelves 20C. The SS 20E provides the interface to the system operator's Operational Support Systems (OSS). The SS manages tasks such as System Configuration, Provisioning, Maintenance, Inventory, Performance Monitoring and Diagnostics. Data traffic coming from the subscriber's network is received by the transmit Ethernet PHY 54, and is routed on-chip to the Tx Ethernet MAC 218, onto the Rx Memory controller 220, and is written into the SRAM 154 via the memory interface 210. Also shown here is a Rx Ethernet monitor 216, which monitors the incoming data

traffic from the subscriber's network and learns the MAC addresses associated with computers (or other devices) in that home. These MAC addresses are stored and utilized by the Rx Memory controller 206 in determining whether received data packets from the QuPlexer.TM. 52 should be routed onto the subscriber's Ethernet connection or dropped);

<u>and</u> *wherein the network node element is configured to not convert a unique address of any network element that is allocated to that network element by the external device for <u>a</u> duration of a temporarily transparent connection established between that network element and the external device* (Adcox as stated in par. [0110-0115], [0119], FIG. 17 illustrates an exemplary FTTH system 400 with an Ethernet connection supporting MAC layer address translation. The system 400 includes a plurality of HNUs 410 coupled to the central office 12 via the passive optical network (PON) 44, 46. Preferably, each single fiber 44 in the PON is split with a passive splitter 46 to support four HNUs 410. In addition, each HNU 410 in the system 400 is coupled to a plurality of host systems 415-418 via an Ethernet drop 54. The central office 12 and PON 44, 46 may be similar to those described above. For example, the central office 12 preferably includes a QOIU 20A, Ethernet switch 22, and PPPOE server 26A, as describe above with reference to FIG. 4. The host systems 415-418 are processing devices, such as personal computers, that are configured to communicate over an Ethernet connection. Each host system 415-418 is assigned a static MAC address, typically by a manufacturer that identifies the device on the Ethernet. The HNUs 410 are each assigned a base MAC address (e.g., 00:B0:48:00:34:B1) that is used to transmit and

receive data traffic over the PON 44, 46, as described above. In addition, the HNUs 410 are also assigned a plurality of secondary MAC addresses, each corresponding to one of the host systems 415-418 coupled to the HNU 410 via the Ethernet drop 54. Preferably, the secondary MAC addresses of the HNU 410 are assigned by incrementing the base MAC address by a set value. In the illustrated embodiment, for example, the secondary MAC address corresponding to host 1 (415) is 00:B0:48:00:34:B2, which is assigned by incremented the base MAC address by a value of 1. Operationally, data traffic may be transmitted to and from the HNU 410 using either the base MAC address or any of the secondary MAC addresses. In addition, the HNUs 410 each include a MAC address look-up table 420 that is used to relate the secondary HNU MAC addresses with corresponding host MAC layer addresses. For example, in the illustrated embodiment, the MAC address look-up table 420 relates the secondary HNU MAC address 00:B0:48:00:34:B2 with the host MAC address 00:E0:98:00:A0:02. For convenience, the secondary HNU MAC addresses shown in the illustrated exemplary MAC address look-up table 420 are identified by only their two least significant digits (e.g., B2-B5). Preferably, the MAC address look-up table 420 relates each host MAC address (e.g., 00:E0:98:00:A0:02) with an entire 6 byte secondary HNU MAC address (e.g., 00:B0:48:00:34:B2). In other embodiments, however, the MAC address look-up table 420 may use alternative schemes to identify the secondary HNU MAC addresses, such as relating only the least significant bit or byte of a secondary HNU MAC address with a corresponding host MAC address. The secondary HNU MAC layer address may be assigned to a particular host system 415-

418 in the MAC address table 420 either statically or dynamically to identify the host device 415-418 from which the data packet was initiated. In another embodiment, the secondary HNU MAC addresses may be static. That is, each host system 415-418 may be permanently assigned a secondary HNU MAC address in the MAC address table 420).

As regards to Claim 32, *Adcox discloses, method of claim 14 wherein the expanded packet- oriented protocol is PPPoE* (Adcox as stated in par. [0090], Data traffic coming from the subscriber's network is received by the transmit Ethernet PHY 54, and is routed on-chip to the Tx Ethernet MAC 218, onto the Rx Memory controller 220, and is written into the SRAM 154 via the memory interface 210. Also shown here is a Rx Ethernet monitor 216, which monitors the incoming data traffic from the subscriber's network and learns the MAC addresses associated with computers (or other devices) in that home. These MAC addresses are stored and utilized by the Rx Memory controller 206 in determining whether received data packets from the QuPlexer.TM. 52 should be routed onto the subscriber's Ethernet connection or dropped. In one embodiment, the system only carries PPPOE traffic, and therefore the Rx Ethernet Monitor 216 is configured to learn only those MAC addresses associated with PPPOE traffic. In this manner, the subscriber can have a home network in their house with a number of computers, but only those machines that communicate using PPPOE can send/receive data outside the home network).

As regards to Claim 33, *Adcox discloses, method of claim 28 wherein the expanded packet- oriented protocol is PPPoE* (Adcox as stated in par. [0090], Data

traffic coming from the subscriber's network is received by the transmit Ethernet PHY 54, and is routed on-chip to the Tx Ethernet MAC 218, onto the Rx Memory controller 220, and is written into the SRAM 154 via the memory interface 210. Also shown here is a Rx Ethernet monitor 216, which monitors the incoming data traffic from the subscriber's network and learns the MAC addresses associated with computers (or other devices) in that home. These MAC addresses are stored and utilized by the Rx Memory controller 206 in determining whether received data packets from the QuPlexer.TM. 52 should be routed onto the subscriber's Ethernet connection or dropped. In one embodiment, the system only carries PPPOE traffic, and therefore the Rx Ethernet Monitor 216 is configured to learn only those MAC addresses associated with PPPOE traffic. In this manner, the subscriber can have a home network in their house with a number of computers, but only those machines that communicate using PPPOE can send/receive data outside the home network).

As regards to Claim 34, *Adcox discloses, method according to claim 14, wherein the at least one network element is comprised of a plurality of network elements and communication of the network elements is effected according to at least one of Internet protocol and PPPoE communication protocol* (Adcox as stated in par. [0013], [0057], The FTTH system provides high-speed symmetrical (i.e., bi-directional) data transport using a secure Point-to-Point Protocol over Ethernet (PPPoE) transport protocol. Data from customers is aggregated and converted, if necessary, at a CO to a protocol compatible with the Internet Service Providers. FIG. 4 is a block diagram showing TCP/IP data transport over an Ethernet connection in a FTTH system. This

figure depicts data flow from the PPPOE broadband remote access server 26A to the individual 10Base-T connections of the HNUs 50. From the PPPOE server 26A, the data connections fan out through Ethernet switches 22).

As regards to Claim 35, *Adcox discloses, network node element according to claim 28 wherein the at least one second network interface is comprised of a modem connected to the network node element* (Adcox as stated in par. [0057-0058], FIG. 4 is a block diagram showing TCP/IP data transport over an Ethernet connection in a FTTH system. This figure depicts data flow from the PPPOE broadband remote access server 26A to the individual 10Base-T connections of the HNUs 50. From the PPPOE server 26A, the data connections fan out through Ethernet switches 22. Each Ethernet switch 22 supports multiple 100 Base-T interfaces 20G to each Quad OIU card 20A, which in turn supports 4 fibers, or 16 HNUs 50, each having a 10 Base-T connection. Via this connectivity, the subscriber can connect their computer via Ethernet to the home network unit 50. The subscriber installs a PPPOE client on their computer that allows them to access ISPs through a dial-up networking client. Thus, to the subscriber software, the Ethernet connection looks just like a dial-up connection, but their is no dialing (as with a modem)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 29-31 rejected under 35 U.S.C. 103(a) as being obvious over US Patent Publication No. 20030236916 to Adcox, Timothy D. et al., (hereinafter "Adcox").

As regards to Claim 29, *Adcox discloses, network node element according to claim 28, wherein the network node element is a router* (Adcox as stated in par. [0074-0075], [0085], FIG. 9 is an electrical block diagram of the HNU 50. The HNU 50 is a unique part of the FTTH system 10 that provides complete, broadband, multi-media access for a single subscriber, as described generally above. The HNU 50 is a locally-powered advanced network device that provides 3 telephone POTS connections, a bi-directional 10Base-T Ethernet connection, a CATV coaxial connection 60, and a DBS digital TV connection 58. These connections, which are preferably located along a single strip on the bottom of the HNU unit 50, are subsequently connected to the internal phone, data, and TV wiring of the subscriber's home or business, and then coupled to the phones, computers, TVs and other peripherals of the subscriber. A fiber splicing tray is mounted in the lid of the HNU housing. An input fiber 48 is routed into the HNU 50, coupled to the fiber splicing tray and fiber 174, and then coupled to the QuPlexer.TM. module 52 mounted on the circuit card. At the HNU 50, the 1310 nm downstream voice/data Packet signals are received by the QuPlexer.TM. 52, extracted and converted into corresponding electrical signals, and routed to the HNU control FPGA 150. From here, the voice packets are extracted and routed to the three POTS lines 56, and the data packets are extracted and routed to the Ethernet PHY 10Base-T interface 54. Also shown at the HNU 50 are the RISC processor 158, the 25 MHZ VCXO 152, and the support SRAM 154. Upstream voice/data information from the

POTS lines and the Ethernet connection are packetized at the FPGA 150 and routed to the QuPlexer.TM. 52 for conversion to 1310 nm optical signals to launch onto the fiber network 44/48 back to the QOIU card 20A).

Adcox does not explicitly disclose “the network node element i. e., HNU 50 is a router”. Instead Adcox discloses “HNU 50 performing routing functions.” However, it would have been obvious for one in the art to recognize that, At the HNU 50, the 1310 nm downstream voice/data Packet signals are received by the QuPlexer.TM. 52, extracted and converted into corresponding electrical signals, and routed to the HNU control FPGA 150. From here, the voice packets are extracted and routed to the three POTS lines 56, and the data packets are extracted and routed to the Ethernet PHY 10Base-T interface 54, is an obvious variant of a router. Replacing one with other does not change the structure or the outcome of the claimed invention.

As regards to Claim 30, *Adcox discloses, network node element according to claim 28, wherein the at least one monitoring unit controls at least one bridging device of the network node element* (Adcox as stated in par. [0105], FIG. 15 shows an HNU timeslot selection interface 330 that may be included in the HNUs 50. As noted above, each of the four HNUs 50 in a group transmit upstream to the central office 12 in one of four TDMA data slots. FIG. 15 shows a mechanism for manually selecting the upstream TDMA time slot for a particular HNU 50. An interface 330 is preferably included on the single circuit card in the HNU 50. This interface consists of four green LEDs 332 and a red LED 334. The four green LEDs 332 are marked HNU1, HNU2, HNU3, and HNU4, and the red LED 334 is marked clear. Also included is a select pushbutton 336. The

select pushbutton is used to select the upstream TDMA timeslot for the HNU 50. Each time the pushbutton 336 is depressed, the HNU 50 will cycle from one HNU timeslot to the next, and the associated green LED will be illuminated indicating which HNU timeslot is currently selected).

Adcox does not explicitly disclose “monitoring unit controls at least one bridging device of the network node element”. Instead Adcox discloses “the network node element HNU 50 has a HNU timeslot selection interface 330 which bridges timeslot selection for connection upstream to the central office 12 in one of four TDMA data slots.” However, it would have been obvious for one in the art to recognize that, Timeslot selection interface, is an obvious variant of a bridge. Replacing one with other does not change the structure or the outcome of the claimed invention.

As regards to Claim 31, *Adcox discloses, network node element according to claim 29, wherein the at least one monitoring unit controls at least one bridging device of the network node element* (Adcox as stated in par. [0105], FIG. 16A sets forth the methodology 340 of automatically selecting an HNU timeslot when power is first applied to the HNU 50. Beginning at step 342, power is applied to the HNU 50, or, as described below, a timer interrupt causes the already-powered up HNU 50 to proceed to the remaining steps of the method. At step 344, the HNU 50 retrieves a pre-programmed HNU timeslot from memory. The HNU 50 then determines, at step 346, if that timeslot is already in use by another HNU 50 in the group of four HNUs 50).

Adcox does not explicitly disclose “monitoring unit controls at least one bridging device of the network node element”. Instead Adcox discloses “the network node

element HNU 50 has a HNU timeslot selection interface 330 which bridges timeslot selection for connection upstream to the central office 12 in one of four TDMA data slots." However, it would have been obvious for one in the art to recognize that, Timeslot selection interface, is an obvious variant of a bridge. Replacing one with other does not change the structure or the outcome of the claimed invention.

X. Response to Arguments

I. A. 1. **Appellant argues** that the prior art reference Adcox is not a prior art reference do not anticipate under 35 U.S.C. § 102(e) claimed invention and Examiner has the burden of proving anticipation.

Prior Art reference Adcox et al., is a US Patent Application Publication No. 20030236916, was filed on April 21, 2003 and is Non-provisional-of-Provisional application No. 60374690 filed on April 23, 2002. Thus effective filing date of US Patent Application Publication No. 20030236916 to Adcox et al., is April 23, 2002.

The present Application No. 10529334 was filed 03/24/2005 is a 371 US National stage entry of PCT/DE03/02583 filed 07/31/2003 which claims priority to Foreign Priority German Application No. 10244612.1 filed 09/25/2002, thus has an effective filing date of September 25, 2002.

Hence Adcox is proper Prior Art reference as its effective filing date is before the present application effective filing date.

Examiner's understanding of the Claimed invention is that it relates to method and an arrangement for transparently exchanging data of a network element arranged in a packet-oriented network with a network-external device, via a network node elements and a network node device which are connected based on a common access method.

The reference and patent publication relied on by the examiner in the previous office actions demonstrate that not only were the method and system available in the public domain at the time the invention was made, for delivery of multimedia services to Customer Located Equipment. Locally powered CLE unit (HNU) provides voice, video and data services from the fiber entering the home and media access control (MAC) layer address translation system (network element) is included in a fiber to the home system having a central office that provides network distribution, connectivity and control of broadband video and data plus telephony functionality, and interfaces a packet data network with a passive optical network.

B. Appellant argues:

"Adcox et al. Does Not Anticipate Claims 14-28 and 32-35".

1. Claims 14-27, 32 And 34 Are Allowable.

Adcox et al. is not prior art to the pending claims and do not render claims 15-27, 32 or 34 unpatentable.

Claim 14 requires a network node device to utilize a method that sets up a connection between a first network element and an external device. The

connection is set up such that the unique address of the first network element is converted to an address valid for the external device. If the network node device determines that a message header entry characterizes an expanded packet-oriented protocol, it establishes a temporarily transparent connection between the first network element and the external device. The unique address of the first network element that is valid for the external device is transferred to the external device without converting that address for the duration of the temporarily transparent connection, Claims 15-27, 32 and 34 depend directly or indirectly from claim 14 and also contain these limitations.

In response: Examiner submits the following.

In response to Amendment/Arguments presented by applicant filed on 10/08/2009 Examiner had responded with the rejection in his Final Action dated 02/02/2010 and Advisory Action dated 03/26/2010 to the above claimed features which are reproduced above.

As regards to Claim 14 feature, a network node device to utilize a method that sets up a connection between a first network element and an external device. The connection is set up such that the unique address of the first network element is converted to an address valid for the external device.

Adcox does disclose the claimed feature. FIG. 17 illustrates an exemplary FTTH system with an Ethernet connection supporting MAC layer address translation, where HNU as network node device sets up connection between Hosts 415-418 (network elements) and external network device such as Central

Office, ISP or PPPOE server. The host systems 415-418 are processing devices, such as personal computers, that are configured to communicate over an Ethernet connection. Each host system 415-418 is assigned a static MAC address, typically by a manufacturer that identifies the device on the Ethernet (Unique Address). Exemplary MAC addresses are shown in FIG. 17 for each of the four illustrated host systems 415-418.

As regards to Claim 14 feature, If the network node device determines that a message header entry characterizes an expanded packet-oriented protocol, it establishes a temporarily transparent connection between the first network element and the external device. The unique address of the first network element that is valid for the external device is transferred to the external device without converting that address for the duration of the temporarily transparent connection.

Adcox does disclose the claimed feature. An example of an outgoing data packet 500 transmitted from the HNU 410 to a network device is shown in FIG. 18. The data packet includes a header 502, a data payload 504, and a CRC checksum 506. The header 502 includes a 6 byte destination address 508 that identifies the network device, a 6 byte source address 510 that identifies the HNU 410, and a 2 byte protocol field 512 that identifies the protocol of the data payload (e.g., IP). As explained above, the source address 510 of the data packet 500 is a secondary MAC layer address that identifies the HNU 410 and also identifies one of the host systems 415 by means of its least significant byte

(e.g., B2). FIG. 4 is a block diagram showing TCP/IP data transport over an Ethernet connection in a FTTH system. This figure depicts data flow from the PPPOE broadband remote access server 26A to the individual 10Base-T connections of the HNUs 50. Via this connectivity, the subscriber can connect their computer via Ethernet to the home network unit 50. The subscriber installs a PPPOE client on their computer that allows them to access ISPs through a dial-up networking client. Thus, to the subscriber software, the Ethernet connection looks just like a dial-up connection and the connection is always active. The subscriber can drop a connection and make a connection to another ISP or to their corporation or to some other source. The HNUs 410 are each assigned a base MAC address (e.g., 00:B0:48:00:34:B1) that is used to transmit and receive data traffic over the PON 44, 46, as described above. In addition, the HNUs 410 are also assigned a plurality of secondary MAC addresses, each corresponding to one of the host systems 415-418 coupled to the HNU 410 via the Ethernet drop 54. Preferably, the secondary MAC addresses of the HNU 410 are assigned by incrementing the base MAC address by a set value. In the illustrated embodiment, for example, the secondary MAC address corresponding to host 1 (415) is 00:B0:48:00:34:B2, which is assigned by incremented the base MAC address by a value of 1. Operationally, data traffic may be transmitted to and from the HNU 410 using either the base MAC address or any of the secondary MAC addresses. The secondary HNU MAC layer address may be assigned to a particular host system 415-418 in the MAC address table 420 either statically or

dynamically to identify the host device 415-418 from which the data packet was initiated. For example, in one embodiment, the secondary HNU MAC addresses may be dynamic. That is, a secondary HNU MAC address may be temporarily assigned to a particular host system 416 when the host system 416 first communicates with the HNU 410. The secondary HNU MAC address may then be reassigned to another host device 415, 417, 418 if the HNU 410 and host system 416 are not in communication for a set period of time. In another embodiment, the secondary HNU MAC addresses may be static. That is, each host system 415-418 may be permanently assigned a secondary HNU MAC address in the MAC address table 420.

Thus it is well apparent that when HNUs 410 are each assigned a base MAC address (e.g., 00:B0:48:00:34:B1), in addition, the HNUs 410 are also assigned a plurality of secondary MAC addresses, each corresponding to one of the host systems 415-418 coupled to the HNU 410 via the Ethernet drop 54 that is used to transmit and receive data traffic over the PON 44, 46, For example, in one embodiment, the secondary HNU MAC addresses may be dynamic. That is, a secondary HNU MAC address may be temporarily assigned to a particular host system 416 when the host system 416 first communicates with the HNU 410. The secondary HNU MAC address may then be reassigned to another host device 415, 417, 418 if the HNU 410 and host system 416 are not in communication for a set period of time. Hence dynamically assigned unique secondary MAC addresses (source address) of the host systems (network

element) are valid for the external network device and packets are transferred to the external device without converting that address for the duration of the temporarily transparent connection.

Appellant argues:

2. Claims 28-31, 33 And 35 Are Allowable Over Adcox et al.

Claim 28 requires a network node element for supporting a transparent exchange of data packets to include at least one first network interface configured to connect to a packet-oriented network, at least one second network interface configured to connect to an external device, and at least one monitoring unit operatively connected to at least one of the at least one first network interface and the at least one second network interface. The at least one monitoring unit is configured to establish a temporarily transparent connection between at least one network element of the packet-oriented network and the external device. The network node element is also configured to not convert a unique address of any network element that is allocated to that network element by the external device for duration of a temporarily transparent connection established between that network element and the external device. Claims 29-31, 33 and 35

In response: Examiner submits the following.

Adcox does disclose the claimed feature. FIG. 11 is an electrical block diagram showing the logical components of the control Field Programmable Gate Array (FPGA) 150 operating within the HNU 50. Packets are also monitored coming downstream from the home devices to the HNU 50, and if it matches a

MAC address that has already been learned by the HNU 50 as being associated with peripherals coupled to the Ethernet PHY 54, then the packet gets forwarded on to the Ethernet connection. Also shown here is a Rx Ethernet monitor 216, which monitors the incoming data traffic from the subscriber's network and learns the MAC addresses associated with computers (or other devices) in that home. These MAC addresses are stored and utilized by the Rx Memory controller 206 in determining whether received data packets from the QuPlexer.TM. 52 should be routed onto the subscriber's Ethernet connection or dropped. In one embodiment, the system only carries PPPOE traffic, and therefore the Rx Ethernet Monitor 216 is configured to learn only those MAC addresses associated with PPPOE traffic. In this manner, the subscriber can have a home network in their house with a number of computers, but only those machines that communicate using PPPOE can send/receive data outside the home network.

C. Appellant argues:

Examiner has failed to meet his burden of showing Adcox et al. is prior art.

1. The Portions of Adcox et al. The Examiner Relies upon Are Not supported In The Provisional Application.

In response: Examiner submits the following.

Adcox et al., is considered to be prior art based on the Abstract, drawing and specification submitted as on 04/23/2002. Miscellaneous Incoming Letter pages 1-55 disclose, Fiber to the Home (FTTH) Multimedia Acess Systems With Reflection PON application from Joint inventor Kimbrough, Mahlon D.

Appellant argues:

II. Rejection of Claims 29-31 as Obvious in View of Adcox et al.

A. Examiner's Burden of Proving Obviousness

In response: Examiner submits the following.

For the rest of the Claims under Appeal (i.e. Claims 29-31), Appellant's arguments are all based on the disqualification of Adcox as a prior art references for the reasons recited above, which has been responded to by the examiner accordingly.

XI. Related Proceeding(s) Appendix

No decision rendered by a Court or the Board is identified by the examiner in the related Appeals and Interference section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Muktesh G. Gupta/

Patent Examiner, Art Unit 2444

/William C. Vaughn, Jr./

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